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
Arizona Corporation Commission

DOCKETED

March 29, 2019

Docket Control
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, AZ 85007

MAR 29 2019

DOCKETED BY


RE: Arizona Public Service Company
2018 Renewable Energy Standard Annual Compliance Report
Docket No. E-00000R-16-0084

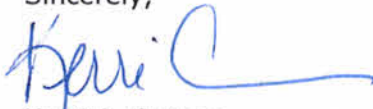
Pursuant to Arizona Administrative Code R14-2-1812(A), Arizona Public Service Company (APS or Company) is required to file an annual report detailing its compliance with the Renewable Energy Standard (RES) rules:

Beginning April 1, 2007, and every April 1st thereafter, each Affected Utility shall file with Docket Control a report that describes its compliance with the requirements of these rules for the previous calendar year.... The Affected Utility shall also transmit to the Director of the Utilities Division an electronic copy of this report that is suitable for posting on the Commission's website.

Attached please find the Company's 2018 RES Compliance Report. An electronic copy of the RES Compliance Report will also be provided to Staff's Utilities Division Director. Competitively confidential information contained in the Report and native Excel files will be submitted to Staff separately pursuant to an executed Protective Agreement.

If you have any questions, please contact me at (602) 250-3341.

Sincerely,



Kerri A. Carnes

KC/ks
Enclosures

c: Elijah Abinah (via e-mail with file for publication)
James Armstrong
Barbara Keene



2018 RENEWABLE ENERGY STANDARD COMPLIANCE REPORT

March 29, 2019

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Renewable energy resources installed in APS's service territory produced 3,975,899 MWh in 2018, which includes energy from rooftop solar installations for which an incentive was not provided. This is equivalent to nearly **14.3 percent** of APS's 2018 retail sales. APS's renewable energy portfolio and compliance with the Renewable Energy Standard (RES) are discussed below.

I. 2018 Renewable Energy Standard (RES) Results

A. Compliance with RES Requirements

The Arizona Corporation Commission (Commission) requires through the Renewable Energy Standard and Tariff Rules (RES Rules) that 8.0 percent of the utility's 2018 retail kilowatt-hour (kWh) sales come from eligible renewable energy resources.¹ In 2018, the Company's total RES resources were 2,992,274 MWh, which is **10.7 percent** of APS's total 2018 retail sales. The RES Rules further mandate that 30 percent of an affected utility's total requirement be fulfilled with energy produced from Distributed Energy (DE) sources, one-half of which may come from residential applications and the remaining one-half from non-residential, non-utility applications. APS requested and received a waiver from the residential DG requirement as **APS did not meet the residential DE requirement. However, APS did meet the non-DE RES compliance requirement in 2018.**

Under the RES Rules, compliance to the RES is measured using Renewable Energy Credits (RECs). For the purposes of RES compliance tracking, a REC is defined as the environmental attributes associated with a kWh of energy derived from eligible renewable resources or the kWh equivalent of conventional resources displaced by distributed resources; however, throughout the Compliance Report APS discloses its production in megawatt-hours (MWh).²

The table found in Appendix A represents APS's 2018 performance vs. RES Requirements. A more detailed summary of APS's 2018 compliance is shown in Appendix B. Appendix C illustrates total RES resources on the APS system at the end of 2018.

¹ A.A.C. R14-2-1804(B)

² A.A.C. R14-2-1805(B),(D)

B. Installed Resources

An overview of APS's total installed portfolio at the end of 2018 is provided in Appendix C. The table includes projects installed to-date from prior calendar years, including grid-scale renewable resources, accounting adjustments for RES eligibility standards, including the subtraction of Green Choice sales, the expected production (annualized) from installed DE systems, a multiplier applied to in-state solar installations completed by end of year 2005, and Renewable Generation Resources.^{3,4}

II. 2018 Associated Revenue and Costs

A. Renewable Energy Standard Adjustment Charge (REAC-1)

Revenues allocated to offset authorized program expenses are collected through both the Renewable Energy Standard Adjustment Charge (REAC-1) and base rates.⁵ REAC-1 collects funds for RES programs based on a per kWh charge and associated caps and averages as shown in Appendix D. Accrued revenue collected in a prior year may be designated to offset expenses in the current year (Appendix E).

B. Resource Costs

Pursuant to A.A.C. R-14-2-1812(B), APS is required to report any above-market, utility-scale power purchase expenditures as well as cash incentive payments by technology. Actual costs are competitively confidential and have been redacted, but will be provided to Commission Staff pursuant to a protective agreement in this matter. Appendices F and G reflect actual 2018 expenses for projects reaching commercial operation in prior years and at contracted market pricing at the time of commercial acceptance.⁶

C. Residential and Non-Residential Incentive Program

Consistent with prior Commission decisions, APS offered no incentives in 2018.

D. Green Choice Rate Program

The Commission authorized APS to extend its Green Choice Program and the three associated Green Power Rate Schedules GPS-1, GPS-2, and GPS-3. In 2018, 1,264 customers subscribed to these rates for 30,162 MWh of sales and gross revenue of \$309,082.

³ Per A.A.C. R14-2-1801(R) and Decision No. 72737. Wholesale Distributed Generation includes utility-owned and non-utility owners of eligible renewable energy resources interconnected at 69kV or lower.

⁴ APS defines Renewable Generation as renewable resources interconnected on the utility side of the meter. Renewable Generation resources are generally grid-scale projects and apply to the RES total production requirement.

⁵ Per Decision Nos. 76295 and 76312.

⁶ Invoice costs do not include associated system integration costs for these resources.

In 2018, Green Choice block and percentage options were self-certified by APS.⁷ The renewable energy sources used in the APS Green Choice Program were: Biogas/Landfill Gas 2%, Biomass 12%, and Wind 86%.

E. APS Solar Communities

The APS Solar Communities program launched in April 2018 and reached a total of 127,042 statewide residential limited and moderate income customers via in person community events, direct mail letters, emails, targeted digital banner ads and targeted Facebook social media to raise awareness of the program.

APS received over 1,600 residential applications for participation in the program with 189 solar installations in 2018.

APS implemented creative solutions for increased adoption due to customer feedback including:

- Decreased allowable system size from 4kW to 2kW to include more customers with smaller roofs into the program;
- Included roofs that are east facing in the northern areas of APS's service territory;
- Produced pedestal options for manufactured homes; and
- Increased installer quality through trackable metrics and cycle times.

APS received 38 complete and submitted applications for non-residential participation and approved 9 organizational sites including Title I Schools, non-profits and rural government customers.

APS launched multi-family in October 2018 targeting strategic partners across the state with low income multi-family housing. APS will continue to work with these organizations to discuss the program opportunities and benefits for 2019.

⁷ Per Decision No. 76312.

III. Additional Reporting

- Decision No. 72022 required APS to list cases within the previous three calendar years where APS has received damages or other considerations as a result of non-compliance related to RES contracts. No additional damages or other considerations were realized in 2018 as a result of non-compliance related to RES contracts. Please see APS's 2017 RES Compliance Report for any damages received in 2017 and 2016.
- Decision No. 71958 required APS to file in its annual REST reports, in the confidential materials provided to Staff, specific data associated with APS's Bagdad Solar Agreement. APS has provided this information to Commission Staff pursuant to a Protective Agreement executed in the matter.
- Decision No. 71646 required APS to provide progress reports on the Flagstaff Community Power Project-Pilot with its annual compliance report. APS completed the final installations associated with the Community Power Project in 2012. Per Decision No. 76295, the revenue requirement of the Community Power Project was transferred from the REAC into base rates in 2017, so information regarding this project will no longer be included in our compliance reports.

IV. **Appendix A: 2018 Performance vs. RES Requirements**

Category	Metric	%	Compliance Measure (MWh)	RES Resources (MWh)	% of Requirement ¹
2018 Total RES Requirement	% of Retail Sales	8.0%	2,227,117	2,992,274	134.4%
Distributed Energy RES Requirement	% RES Requirement	30%	668,135	789,989	118.2%
Residential DE Requirement	% of DE Requirement	50%	334,068	308,217	92.3%
Non-Residential DE Requirement	% of DE Requirement	50%	334,068	481,772	144.2%

Notes to Appendix A:

¹The Percentage of Requirement is calculated by dividing the RES Resources by the Compliance Measure.

V. Appendix B: 2018 Compliance Summary

Category	Metric	%	Compliance Measure (MWh)	RES Resources (MWh or Equivalent)	
Retail Sales	Actual MWh Sales for 2018		27,838,963		
Prior year carrying balance ¹				6,846,546	(I)
2018 Total RES Requirement	% of Retail Sales	8.0%	2,227,117		(J)
DE Requirement	% of RES Requirement	30%	668,135		
DE Sub-Requirements:					
Residential DE	% of DE Requirement	50%	334,068	308,217	(K)
Non-Residential DE	% of DE Requirement	50%	334,068	481,772	(L)
RG Requirement	% of RES Requirement	70%	1,558,982	2,202,286	(M)
2018 Total RES Resources [From (H) in Appendix C] (K + L + M)				2,992,274	(N)
Resources Used for 2018 Compliance (J)				2,227,117	(J)
End 2018 carrying balance (I + N - J)				7,611,703	(O)

Notes to Appendix B:

¹The RES-eligible resource carrying balance is accounted for using First-In-First-Out (FIFO) methodology, wherein the entire carrying balance is applied to the RES requirement and the year-end carrying balance consists of current year remaining resources.

VI. Appendix C: 2018 Renewable Resources

Resource	Technology	Ownership	MWac ¹	MWdc ¹	Production MWh (Actual)	Production MWh (Annualized) ²	Multiplier Credits (MWh)	Total MWh or Equivalent
GENERATION:								
Aragonne Mesa	Wind	3rd Party PPA	90		264,206			264,206
High Lonesome	Wind	3rd Party PPA	100		265,742			265,742
Perrin Ranch	Wind	3rd Party PPA	99		212,580			212,580
Snowflake White Mountain Power	Biomass	3rd Party PPA	14		101,233			101,233
Glendale Landfill	Landfill Gas	3rd Party PPA	3		14,228			14,228
Northwest Regional Landfill Gas	Landfill Gas	3rd Party PPA	3		22,986			22,986
Saltton Sea/CE Turbo	Geothermal	3rd Party PPA	10		78,744			78,744
Ajo	Solar PV	3rd Party PPA	5		9,138			9,138
Bodger 1 Solar	Solar PV	3rd Party PPA	15		40,448			40,448
Giespie 1 Solar	Solar PV	3rd Party PPA	15		40,026			40,026
Prescott	Solar PV	3rd Party PPA	10		14,661			14,661
Saddle Mountain	Solar PV	3rd Party PPA	15		34,537			34,537
AZ Sun: China Valley	Solar PV	APS	19		44,578			44,578
AZ Sun: Cotton Center	Solar PV	APS	17		36,792			36,792
AZ Sun: Foothills I/II	Solar PV	APS	35		93,025			93,025
AZ Sun: Hyder I	Solar PV	APS	16		37,780			37,780
AZ Sun: Hyder II	Solar PV	APS	14		37,061			37,061
AZ Sun: Paloma	Solar PV	APS	17		37,861			37,861
AZ Sun: Gila Bend	Solar PV	APS	32		96,213			96,213
AZ Sun: Luke AFB	Solar PV	APS	10		31,053			31,053
AZ Sun: Desert Star	Solar PV	APS	10		29,689			29,689
Smel Solar Projects	Solar PV	APS	4		7,952		3,451	11,403
Solana CSP	Solar CSP	3rd Party PPA	250		776,013			776,013
Gross Total			803		2,326,546		3,451	2,329,997
Adjustments								
Special Contracts ³					(30,736)			(30,736)
Green Choice Sales					(30,162)			(30,162)
Wholesale DE Component					(66,814)			(66,814)
Subtotal Generation			803		2,198,834		3,451	2,202,286 (A)
DISTRIBUTED ENERGY (DE):								
Residential:								
UFI Installations ⁴	Various	Customer-Sided DE	130	154	242,550	50,376		292,926
Non Incentive Installations	Solar PV	Customer-Sided DE	462	514	646,930	249,120		896,050
Flagstaff Community Power Project	Solar PV	APS	0.5	0.6	666			666
APS Solar Partner Program	Solar PV	APS	9.4	11.1	14,531			14,531
APS Solar Communities Program	Solar PV	APS	1.2	1.4	93			93
Gross Total			604	711	904,770	299,497		1,204,267
Subtotal Residential			604	711	904,770	299,497		1,204,267 (B)
Non-Residential:								
UFI Installations ⁴	Various	Customer-Sided DE	14	17	18,435	22,015		40,450
PBF Installations ⁴	Various	Customer-Sided DE	110	129	200,992			200,992
Non Incentive Installations	Solar PV	Customer-Sided DE	49	57	31,074	56,500		87,574
DE RFP ⁵	Solar PV	Customer-Sided DE	38	45	76,175			76,175
Schools & Government (3rd-Party Owned)	Solar PV	Customer-Sided DE	40	48	74,241			74,241
Schools & Government (Utility-Owned)	Solar PV	APS	13	15	21,363			21,363
Flagstaff Community Power Project	Solar PV	APS	0.9	1.1	1,739			1,739
Gross Total ⁶			265	312	424,018	78,515		502,533
Wholesale DE Component			n/a	n/a	66,814			66,814
Subtotal Non-Residential			265	312	490,832	78,515		569,347 (C)
Subtotal Distributed Energy⁷ (B + C)			869	1,022	1,395,602	378,012		1,773,614 (D)
Total Renewable Energy Resources (A + D)					3,594,436	378,012	3,451	3,975,899 (E)
Total MWac equivalent⁸			1,672					
Total Non Incentive Energy Resources					678,005	305,620		983,625 (F)
Total Non Incentive MWac equivalent			511					
Total RES Resources⁹ (E - F)					2,916,432	72,391	3,451	2,992,274 (G)
Total MWdc equivalent¹⁰			1,161					

Notes to Appendix C:

¹ Renewable Generation capacity is reported in MWac and DE is generally reported in MWdc.

² Subtotal Distributed Energy = production (actuals) + production (annualized) in MWh. For 2018, annualized generation computed approximately 19% MWh of a 1 DE capacity. Production (annualized) assumes an average of 1,660 kWh per installed kW for non-metered or current year installed residential PV systems, and metered average kWh per installed kW for non-residential systems.

³ Energy sold through Special Contracts has been removed from Distributed Generation totals. The 2017 Compliance Report overstated the Special Contracts MWh by 56,258 MWh, thereby understating the Total RES Resources used in 2017 by 56,258 MWh.

⁴ Includes energy for all installations, but only notes capacity for solar electric and wind installations.

⁵ Approved PBF program per Decs on Nov-70313 and 71459.

⁶ Represents the total RES portfolio capacity in MWdc. Assumes a 95% de-ac conversion factor applied to MWac capacity.

⁷ Total RES Resources does not include energy from non-incentive installations which may be sold during for compliance in future years.

**VII. Appendix D: 2018 RES Adjustment Schedule REAC-1
(effective July 1, 2018)**

	Residential	XS Commercial (<20 kW)	XS/Small Commercial (21-100kW)	Medium Commercial (101-400 kW)	Large Commercial (401-3,000 kW)	Industrial (>3,000 kW)
\$/kWh	\$0.007513/kWh					
Cap	\$3.01	\$111.62		\$187.83	\$375.65	\$2,441.00
Average	\$2.74	\$6.27 Minimum Charge	\$31.37 Minimum Charge	\$157.84	\$326.14	\$2,441.00

VIII. Appendix E: 2018 RES Associated Revenues and Costs

2018 RES Associated Revenues and Costs - As of December 31, 2018

Funds Available (Revenues)

System Benefit Charge (SBC) Revenue ¹	\$	6,000,000
Renewable Energy Standard (RES) Revenue & Other ²	\$	91,203,802
<i>Subtotal: 2018 Collections</i>		<i>97,203,802</i>
2017 Committed Accrual for Solar Water Heaters ³		5,166
Prior Years Collected and Unallocated Funds		4,156,178
<i>Balance of Funds Available as of December 31, 2017</i>		<i>4,161,344</i>
Total: Available Revenue	\$	101,365,146

Expenses (Costs)

<i>Energy/Incentives</i>		
Renewable Generation Purchased Power	\$	37,935,291
Distributed Energy Incentives ⁴	\$	32,364,277
<i>Subtotal: Energy and Incentives</i>	<i>\$</i>	<i>70,299,568</i>
<i>Non-Energy Costs</i>		
Administration & Implementation		7,766,276
Research, Commercialization & Integration		999,608
Customer Outreach and Awareness Programs		31,284
<i>Subtotal: Non-Energy Costs</i>	<i>\$</i>	<i>8,797,168</i>
<i>APS Owned Program Costs</i>		
APS Solar Communities		(1,063,999)
<i>Subtotal: APS Owned Program Costs</i>	<i>\$</i>	<i>(1,063,999)</i>
Total: Expenses	\$	78,032,737

Balance as of December 31, 2018 \$ 23,332,409

Notes to Appendix E:

¹ Collected from base rates.

² Collected as part of the environmental surcharge and other miscellaneous 2018 program related receipts.

³ Balance of up-front incentives reservations for solar water heaters issued and paid.

⁴ Incentives billed in 2018.

IX. Appendix F: 2018 RES Resource Costs

2018 RES-Attributable Energy Costs (Above Market - Utility Scale)¹

COMPETITIVELY CONFIDENTIAL²

Technology	MW	MWh	RES Cost (\$/MW) ²	RES Cost (\$/MWh) ²	Total RES Cost ²
Wind	289	742,528			
Biomass ³	14	101,233			
Landfill Gas	6	37,214			
Geothermal	10	78,744			
Solar PV PPA ⁴	60	138,810			
Solar CSP	250	776,013			

2018 RES-Attributable Energy Costs (Above Market - Utility Scale)

\$ 35,298,458

Notes to Appendix F:

¹ Includes only 2015 program year costs incurred under new and legacy projects within the RES budget and is not comparable to a levelized cost of energy.

² Redacted due to the competitively confidential nature of the information.

³ Includes gross generation, and does not adjust for Wholesale DE allocations.

⁴ Does not include Purchase Power Agreements from Distributed Energy sources.

X. Appendix G: RES Cash Incentive Costs

Distributed Energy Production Based Incentive Program Costs for Systems Paid in 2018

	Production-Based Incentives				Total Incentives Paid (\$)
	MW	MWh ¹	(\$/MW)	(\$/MWh) ²	
Solar Electric	221	309,216	\$ 107,299	77	\$ 23,754,534
Combined Heat & Power	-	-	\$ -	-	\$ -
Solar Water Heating	N/A	2,068		36	\$ 74,266
Solar HVAC	N/A	5,581		93	\$ 517,920
<i>Subtotal: Production Based Incentives</i>	<i>221</i>	<i>316,865</i>			<i>\$ 24,346,720</i>

Notes to Appendix G:

¹ Includes energy installed in calendar year 2018 (estimated annual system offset).

² Reflects 2018 incentive dollars divided by associated MWh.